Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (currently amended): A multiple step-sized levels adaptive method for time scaling to synthesize an $S_3[n]$ signal from an $S_1[n]$ signal and an $S_2[n]$ signal, the method comprising:

(a) calculating a first magnitude of a cross-correlation function of the $S_1[n]$ signal and the $S_2[n]$ signal according to a first index;

(b) comparing the first magnitude with a threshold value;

(c) if the first magnitude is smaller than the threshold value, calculating a first reference magnitude of the cross-correlation function of the $S_1[n]$ signal and the $S_2[n]$ signal according to a first reference index behind the first index by a first determined number, or calculating a second reference magnitude of the cross-correlation function of the $S_1[n]$ signal and the $S_2[n]$ signal according to a second reference index behind the first index by a second number; and

(d) synthesizing the $S_3[n]$ signal by weighting the $S_1[n]$ signal and adding the weighted $S_1[n]$ signal to an $S_4[n]$ signal that lags the $S_2[n]$ by a maximum index ~~adding the $S_1[n]$ signal to the $S_2[n]$ signal in accordance with a maximum index~~ corresponding to a largest magnitude among all of the magnitudes calculated in step (c),

wherein the $S_1[n]$ signal has N_1 elements while the $S_2[n]$ signal has N_2 elements, and the $S_3[n]$ signal

= the $S_1[n]$ signal, where $0 <= n <$ the maximum index;

= $(N_1-n)/(N_1$ - the maximum index$)*S_1[n]+(n$ - the maximum index$)/(N_1$ - the maximum index$)*S_4[n$ - the maximum index$]$, where the maximum index $<= n < N_1$;

= $S_4[n-$ the maximum index$]$, where $N_1 <= n <= N_2$ - the maximum index.

2-3 (cancelled).

4 (original): The method of claim 1 wherein step (c) further comprises:

(e) setting each of the magnitudes corresponding to indexes between the first index and the first or second reference index to zero.

5 (original): The method of claim 1 further comprising:

(f) updating the threshold value according to the maximum index.

6 (original): The method of claim 1 wherein the $S_1[n]$ signal and the $S_2[n]$ signal are sampled from an $S_1(t)$ signal and an $S_2(t)$ signal respectively.

7 (original): The method of claim 6 wherein the $S_1(t)$ signal and the $S_2(t)$ signal are both derived from an original signal.

8 (original): The method of claim 7 wherein the original signal is an audio signal.

9 (original): The method of claim 7 wherein the original signal is a video signal.

10 (original): The method of claim 7 wherein the $S_1(t)$ signal and the $S_2(t)$ signal are identical.

11 (original): The method of claim 7 wherein the $S_1(t)$ signal and the $S_2(t)$ signal are different from each other.

12 (original): The method of claim 1 wherein the second number is equal to one.

13 (original): The method of claim 1 wherein the first determined number is larger than one.

14 (currently amended): A multiple step-sized levels adaptive method for time scaling to synthesize an $S_3[n]$ signal from an $S_1[n]$ signal and an $S_2[n]$ signal, the method comprising:

(a) delaying the $S_1[n]$ signal by a predetermined number to form an $S_5[n]$ signal;

(b) calculating a first magnitude of a cross-correlation function of the $S_1[n]$ signal and $S_5[n]$ signal according to a first index;

(c) comparing the first magnitude with a threshold value;

(d) if the first magnitude is smaller than the threshold value, calculating a first reference magnitude of the cross-correlation function of the $S_1[n]$ signal and the $S_2[n]$ signal according to a first reference index behind the first index by a first determined number, or calculating a second reference magnitude of the cross-correlation function of the $S_1[n]$ signal and the $S_2[n]$ signal according to a second reference index behind the first index by a second number; and

(e) synthesizing the $S_3[n]$ signal by weighting the $S_1[n]$ signal and adding the weighted $S_1[n]$ signal to an $S_4[n]$ signal that lags the $S_5[n]$ signal by the predetermined number plus a maximum index ~~adding the $S_1[n]$ signal to the $S_2[n]$ signal in accordance with a maximum index~~ corresponding to a largest magnitude among all of the magnitudes calculated in step (d),

wherein the $S_1[n]$ signal has N_1 elements while the $S_2[n]$ signal has N_2 elements, and the $S_3[n]$ signal equals:

= the $S_1[n]$ signal, where $0 <= n <$ (the predetermined number + the maximum index);

= $(N_1-n)/(N_1-$(the predetermined number + the maximum index)$)*S_1[n]+(n-$(the predetermined number + the maximum index)$)/(N_1-$(the predetermined number + the maximum index)$)*$ $S_4[n-$(the predetermined number + the maximum index)$]$, where (the predetermined number + the maximum index) $<= n < N_1$;

= $S_4[n-$(the predetermined number + the maximum index)$]$, where $N_1 <= n <=$ (N_2 + the predetermined number + the maximum index).

15-16 (cancelled).

17 (original): The method of claim 14 wherein step (d) further comprises:

(f) setting each of the magnitudes corresponding to indexes between the first index and the first or second reference index to zero.

18 (original): The method of claim 14 further comprising:

(g) updating the threshold value according to the maximum index.

19 (original): The method of claim 14 wherein the second number is equal to one.

20 (original): The method of claim 14 wherein the first determined number is larger than one.